



## What is Rigor?: A Qualitative Analysis of One School's Definition

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### What is Rigor?: A Qualitative Analysis of One School's Definition

In an era of increasing accountability, school administrators and faculties often find themselves amid a plethora of best practices and strategies aimed at improving students' academic achievement. In the midst of these discussions, school culture is often hailed as the key to creating effective schools because it defines how people within a particular school are to behave and what they are to value (Stolp & Smith, 1995). Furthermore, it allows administrators to draw attention to some of the culture's most important aspects: its values, beliefs, and assumptions that create the school's vision for excellence (Stolp & Smith, 1995). Malloy (2005) further asserts that "a school's culture creates an environment where students can respond to the instruction afforded them" (p. 140). Malloy's definition clarifies that school culture not only impacts the ways schools "feel" to people who walk the halls, but that culture also has a direct impact on student achievement and learning.

Positive school cultures are linked to increased student engagement, academic achievement, and increased teacher job satisfaction (Stolp & Smith, 1995). Stolp and Smith (1995) also discovered school culture can overcome family background challenges (such as single parent, first generation graduate, etc.) and economic risk factors. The results certainly point to the need to improve school culture as a reform method and model. However, school administrators and teachers are left to determine the best way to create an effective culture amid the many recommendations in the literature and the realities of limited financial and human resources in their schools.

One example of effective school culture is that of academic optimism. As defined by Hoy, Tarter, and Woolfolk Hoy (2006), academic optimism is comprised of three separate constructs: collective efficacy of the faculty, faculty's trust in parents and students, and academic emphasis (also known as academic press or rigor). Collective efficacy empowers teachers to believe that they can truly impact student achievement. While collective efficacy focuses solely on teachers, faculty trust encompasses a reciprocal relationship in which parents and teachers alike believe that the other will consistently act in the students' best interests (Hoy, 2006). While the two concepts address the affective dimensions of schools, academic emphasis is a cognitive and behavioral construct consisting of high academic goals for students, an orderly learning environment, motivated students, and a respect by all stakeholders for academic achievement (Hoy, 2006).

This qualitative study examines the definition of rigor and its implementation in one elementary school. By analyzing how rigor is viewed and lived by practitioners in the field, teachers and administrators can develop new strategies for creating a critical element of an effective school culture.

Although academic optimism is a relatively new construct, academic press first emerged in the early 1980s (Phillips, 1997). The definition of academic press varies greatly in both the literature and practice. Shouse (1996) defines academic press as academic climate (consisting of high status courses, assignment of meaningful homework, and earned grades) in combination with a disciplinary climate (defined by high rates of attendance and positive behavior) and teachers' instructional practice (including high standards and meaningful feedback for students). Phillips (1997) articulates academic press as high expectations, clear goals, maximization of time spent on instruction, and the assignment and completion of quality homework. No matter what the definition, however, academic press "stands as a statistically significant predictor of school achievement" (Shouse, 1996, p. 61).

In addition to being a powerful predictor of academic achievement, academic press is a key strategy in narrowing the achievement gap between students from divergent socio-economic backgrounds (Shouse, 1996). The greatest impact of academic press is observed in schools where a majority of students come from low socio-economic backgrounds, and the results are magnified when coupled with a strong sense of community and support within the school. Therefore, academic press serves as a form of cultural capital by providing opportunities for all students to engage in learning opportunities that are challenging and connected to real-world applications, ultimately increasing background knowledge needed for the highest levels of academic achievement (Shouse).

Despite evidence of the significance of academic press for students, its implementation remains challenging for many schools—largely due to a lack of a clear definition. How can a school staff implement what they cannot operationalize within the context of their own building? Although departments of education encourage schools to raise the level of rigor, they often fail to provide schools with any concrete direction or strategies. It is this conundrum that led to my work at Hawk Elementary School (a pseudonym) and our quest to answer the question: What is rigor?

## Methods

### *Method*

A microethnography framework (Creswell, 2008) was used for this qualitative study. Microethnography allows the researcher to focus explicitly on one aspect of a larger belief system of a culture. In this case, the ethnography focused only on the definition and operationization of rigor in Hawk Elementary. The ultimate goal of microethnography is to distinguish the cultural theme and to learn how the construct of interest surfaced in the behavior and language of the culture (Creswell, 2008).

The definitions of rigor, as outlined above, informed the methodology of this study. Research questions and field notes were informed by the definitions of rigor in the literature, although every attempt was made to search for counter-evidence (Creswell, 2008) and definitions unique to Hawk Elementary.

### *Sample*

Hawk Elementary is a small school in a large urban district in the southeastern United States. With 340 students, it is one of the smallest in the district. The population is 69% African American, 25% Hispanic, and 6% Multi-Racial and Caucasian. Hawk is also a Title I school, with 83% of its students receiving free or reduced price lunches. On the 2008 state end-of-year tests, 16% of the third through fifth graders were at or above grade level in reading, and 39% were at or above grade level in math.

My involvement with the site began in the 2006-2007 school year. During that time, I was working as the College Access Programs Coordinator for the district, and I worked with Hawk Elementary to implement programs that increased students' and families' awareness of post-secondary opportunities. I left that position in the spring of 2008 but continued to work with the school as a research project coordinator for a study conducted by a local university.

As the project coordinator, I met with a team at Hawk Elementary to assess the social and emotional environment of the school and then select interventions to improve students' experiences. During meetings, the team often mentioned "rigor" and parents' lack of understanding of how rigorous elementary school is now compared to when they were in elementary school. However, when I asked team members to explain rigor to me, the answers were vague and inconsistent. The apparent lack of clarity ultimately led to the current qualitative study of the definition of rigor within the site.

Two members of the administrative team and five teachers participated in this study. The original design called for six teachers, two of the three teachers from each grade level (3 through 5) involved in the project, but one teacher took a leave of absence during the study. Because of the small sample size, participants are not identified by position within the school or other characteristics to preserve confidentiality. Grades 3 through 5 were selected because of their participation in the college access programs and research project; the previously established relationships and rapport with teachers allowed for more open conversations than if the relationships had not existed. However, previous relationships with interviewees may have also influenced the way participants responded to questions because they knew my biases and beliefs regarding rigor. All of the participants were selected because they were not new to the school and knew its culture and practices well, although their actual years of experience varied. On the whole, teachers with more experience were far more comfortable talking about rigor and its application and provided much richer data. The gap in knowledge about rigor may be explained by newer teachers' being in "survival mode," in which they are focused on learning the curriculum and implementing effective classroom management strategies. It also suggests that rigor is a more complex concept that requires not only professional development but also real classroom experience to implement. All participants were African American females, which is representative of the faculty of the school.

### *Data Collection*

Each participant took part in a 45 minute semi-structured interview scheduled at her convenience. Interviews took place during teachers' planning periods. The administrator interviews were longer due to their more flexible schedules. An interview protocol was followed for all participants that included four questions:

What is your definition of rigor?

How is this definition operationalized in the classroom?

How do all students achieve access to rigor in the classroom?

How are these concepts communicated to families?

Probing questions were asked after each of these questions based upon participants' responses. The interviews were recorded using a digital voice recorder and transcribed verbatim within 24 hours of each interview; reflective notes were inserted into the transcripts by the researcher as appropriate.

During interviews, a classroom observation time was designated for the researcher to examine one of the specific strategies that surfaced during the interview. Although the self-selection of the observation times may have biased the data collected, I wanted teachers to feel comfortable with an outsider in their classroom. Furthermore, the self-selection allowed additional insight into how teachers defined rigor since they chose the most rigorous activity in their classroom to be observed. The observations lasted a minimum of one hour. Observations were conducted during whole group instruction in math, reading, and social studies, guided reading and math, and the scripted reading program. The specific subject matter was not the main focus of the observations; the observations were focused on general instructional practices and student responses

to them. The observation data served as a cross-check of information garnered during interviews regarding instructional practices. During the observations, extensive field notes were taken regarding the actions of teachers and students in the classrooms as well as how classroom events related to interview content. Following the observation, teachers were asked clarifying questions about the classroom activities. Field notes were transcribed and annotated with reflections and analytic notes within 24 hours of the observation.

The district's pacing guides served as a third source of data. The guides were often referenced by teachers as a source of instructional decision making during interviews. Administrators stressed their centrality to all decision making in the district. The guides form an outline of skills and objectives for each day in math, language arts/social studies, and science, and all collaborative planning and formal teacher observations by administrators are based upon the guides. The guides were analyzed for specific strategies that were referenced during interviews to further support teachers' selection of activities to support rigor in the classroom.

Throughout the data collection process, I maintained an observer's role as much as possible. The goal was to minimize my impact on the instruction in order to see the norms and routines of the individual classrooms. However, many times I was not able to remain totally in the observer role. When I sat with small groups of students, for example, I would answer questions posed to me and participate in the group's activities as invited.

Reciprocity was also very important to me as a researcher. Therefore, I often would assist teachers with tasks they were working on during our interviews. Some of the activities included assembling fundraiser packets, cutting bulletin board decorations, and assembling guided math and reading kits. Assisting teachers provided further insights into the types of activities that occurred within classrooms. Furthermore, I often would engage in cognitive coaching with teachers after our interview or observation regarding instructional strategies and general classroom management strategies. Some of the conferences allowed me to ask clarifying questions about what I saw in the classroom; other conferences were meant purely to help teachers refine instructional practices or classroom management strategies. The information gathered during informal conversations greatly informed my knowledge of the general school culture; these observations also become part of my field notes.

Part of this coaching evolved naturally because of my previous work with the school in my former position in the school district as the College Access Programs Coordinator. My role enabled me to work with schools and teachers in grades 3 through 12 to implement strategies that would educate students and families about post-secondary options. Some strategies involved incorporating academic success skills in the classroom, including note taking, higher order thinking, and collaborative learning. Because many teachers had participated in professional development with me before, they still looked to me as a coach and resource. Interestingly, teachers did not focus on the strategies I previously worked to implement; perhaps the two year gap between my direct work with the school and the current project explains the apparent lack of influence my previous work had on teachers' responses. The lack of influence reassured me that the definitions of rigor that emerged were truly those of the school and not directly related to me as a researcher.

While previous experience with the school and teachers helped establish rapport within the school quickly and allowed teachers to trust me more easily, it also provided unique challenges to me as I posed questions and conducted observation. My experience as the College Access Programs Coordinator and a secondary teacher created a clear definition of rigor for me. As I worked with Hawk Elementary, I was constantly aware of my own assumptions and definitions and worked to limit their role in my analysis.

#### *Data Analysis*

Throughout the data collection process, information was analyzed for emerging themes and areas for further examination. Emerging information informed the addition of interview questions and observation foci and the refinement of existing questions and foci.

Once the data collection phase ended, the formal coding process began. Initially, all transcripts and field notes were read for general themes; six emerged: *Accountability*, *Collaborative Planning*, *Differentiation*, *Higher-Order Thinking*, *Real World Application*, and *Parents*. Once initial themes were established, all of the transcripts and field notes were reread to find additional supporting quotations and excerpts; excerpts were placed into Word files. Each file was then read for sub-themes. Quotations and excerpts were categorized into the sub-themes for more detailed analysis. Finally, all transcripts and field notes were read in their entirety one more time to look for counter-examples, which were added to the Word files for each theme.

Once the coding was complete, each theme was analyzed by rereading the complete Word file for significance and authenticity and comparing it with interview transcripts to ensure that the themes reflected the participants' views and words rather than the researchers. At this point, *Higher Order Thinking* and *Real World Application* were collapsed into one theme because of the tremendous amount of overlapping data and definitions. *Parents* was also dropped from further analysis; although there was a significant amount of data in the file, it had little to relevance to rigor. The *Parent* data were primarily descriptions of general communication strategies, which emerged solely because of my specific question regarding parental communication. One interviewee even stated, "We don't really talk with the parents about rigor; we have so many other things to talk about." Although it may ultimately be important for Hawk Elementary to open a line of communication regarding rigor, the school is still wrestling with the definition itself and needs additional clarification and implementation before a clear message regarding rigor can be communicated to parents. The lack of substantial communication regarding rigor resulted in the fourth research question, how rigor is communicated with parents, being dropped from the current qualitative analysis. The study focused, therefore on the first three research questions:

What is your definition of rigor?

How is this definition operationalized in the classroom?

How do all students achieve access to rigor in the classroom?

#### Results

Four key themes emerged as components of a definition of rigor: *Higher Order Thinking* and *Real World Application* as explicit skills to be incorporated in instruction,

*Accountability* in terms of state assessments, *Collaborative Planning* of teachers to design instruction, and *Differentiation* of instruction to meet the needs of all students. Although the four themes are interconnected, participants tended to think of them as discrete items; they spoke of them as distinct phenomenon in the classroom and made clear transitions among them during interviews. The disconnectedness of themes may be the underlying reason why no clear definition of rigor exists within the school. By studying each theme, however, a common definition can be constructed in order to answer the first research question “What is rigor?”: rigor is how the standard curriculum is delivered within the classroom to ensure students are not only successful on standardized assessments but also able to apply this knowledge to new situations both within the classroom and in the real world. The data that garnered this definition actually arose from the second research question, how is rigor implemented in the classroom, demonstrating that the definition of rigor answers the “how curriculum is taught” question of curriculum design rather than the “what is taught” question, as evidenced by the first three themes. The third research question, how do all students access rigor, is answered by the final theme, *Differentiation*.

### *Higher Order Thinking and Real World Application*

According to Pete and Fogarty (2005), higher order thinking links two sets of skills: critical thinking and creative thinking. Critical thinking includes analyzing, evaluating, comparing, contrasting, classifying, and applying metaphors and analogies; creative thinking includes hypothesizing, predicting, inferring, generalizing, and visualizing (Pete & Fogarty, 2005). The goal of education is to not only teach skills to students but also to help them apply them to the types of situations they will encounter beyond the classroom. However, the definitions and application of higher order thinking are not as clearly delineated in practice at Hawk Elementary.

During interviews, most participants defined rigor in terms of higher order thinking through the use of question stems. The district is encouraging the use of question stems based on Bloom’s taxonomy of thinking skills; the stems also appear on the state’s standardized tests. One teacher described the way question stems were utilized in the classroom:

We use these state stems. [She shows a laminated pack of question stems based on Bloom’s taxonomy; these cards have been hole-punched and placed on a ring.] These are in a group, so the kids have to create questions for their shoulder partners. So I tell them you can start over here [knowledge level] but you need to have most of your questions from the back of this [analysis and application]. Every group has these, and they go through and they create questions for their partners, and they try to answer the questions based on what you read. My thing is I want thought provoking questions.

Although this demonstrates students developing questions based upon a traditional higher order model, students do not necessarily understand why they are writing questions from the back of the stem ring. Another teacher admitted the ring has replaced critical thinking in some instances:

They need the ring. That’s the crutch. They are not able to do it without the ring. And even then there’s still a lot of modeling that I’m doing with them. But, some groups still are struggling to learn [how to use the ring].

The ring has become a tool that students use without thinking about why they are using it and why they are asking the questions.

Higher order thinking is not limited to question stems, though. Many teachers discussed the need to help students make connections between the content and their own thinking and experience—even if that meant some unconventional answers to questions:

The children should have the opportunity to ask the questions to help guide their own thinking, that there’s not a right or a wrong. Let’s look at it differently. Or how did you come to that conclusion, because for that student it may not be a wrong. It may be that my thinking was a little skewed, but my skewed thinking and the result I came to are definitely in line with one another. Maybe that’s what we’re going to change. And I think through inquiry, through questioning, and all those things that’s how we get students actively involved in what they’re doing.

In this example, questioning becomes a way to allow students to explore ideas and learn how to think about a concept differently, utilizing both analytical and creative thinking skills. Guided reading and math groups also allow students to practice these skills as they extend their thinking about concepts introduced previously during whole group instruction.

Collaborative groups were also mentioned as being a means of allowing students to practice higher order thinking skills and application to real world situations. Working together, students were better able to develop questions and practice skills that were modeled for them in previous lessons:

it’s a focus on higher order thinking skills, project-based assessment, taking lecturing out of it—you’re dealing more with student ideas and the focus is on them generating some sort of product and them coming up with their conclusions—they putting thoughts together.

One teacher stated that administration did not like seeing students completing worksheets specifically because they were not considered rigorous; teachers believed administrators considered collaborative groups or center-based learning as examples of rigorous activities in the classroom. Collaboration and inquiry-based learning was seen as a way to increase higher order thinking skills. Unfortunately, when teachers are absent, collaborative work is replaced by the worksheet packets that are considered poor practice. The lack of more engaging activities may be caused by the reliance teachers believe students have on them for guidance and support. One teacher expressed this frustration succinctly: “I find that we want to teach rigor but our kids here struggle on the knowledge based questions.” The lack of confidence in students’ abilities limits the amount of higher order thinking skills that students are allowed to demonstrate independently.

Despite the seeming gap in intention and practice, Hawk Elementary is committed to moving forward and increasing the amount of higher order thinking and application occurring in the classrooms:

I think there is a gap in the questioning. I think that the questions that are being asked on formal assessments are not the type of questions that we as educators are familiar and comfortable with always asking. It’s getting students to kind of evaluate things, look at it, and critique it, and then seeing if you can synthesize what you already know and the new piece and come up with something different. That’s where we have to get them to rather than just do they know. Kids know a lot of stuff. It’s just getting

them to take what they know and determine, okay, how can I use it? Okay, when and how do I use this? And then, how can I take that and put it with this and come up with something else? You know? So you have to get them from that declarative knowledge to the procedural to the evaluative level. And that's difficult. So what we're trying to say it's okay if you [the teachers] have to go back and reference a guide to see where a question falls. It's okay if have to go ahead and prewrite your questions out that way you will have a sense of okay this is an analysis question, or this is an application type question. And I know I've been doing most of this, so how do I continue to raise the level?

The increase in rigor is the subject of faculty retreats and professional development. Administrators also focus on these issues as they are conducting formal and informal observations with the goals of coaching teachers. Higher order thinking and real world application are the cornerstones of the school's definition of rigor, and it is gradually being refined in classrooms throughout the school.

### *Accountability*

Lee and Smith (1999) posit that two factors motivate schools to raise the level of rigor in the classrooms: teacher expectations and externally-imposed standards. The state assessments, and the district benchmarks aligned to them, have been a motivating factor for Hawk Elementary School. One participant simply stated, "I would like to say it was in the name of rigor, but rigor has been driven by accountability."

Because the school has such low passage rates on the highly public state assessments, they have necessarily become intently focused on their data. In order to gather more timely and relevant data, teachers design bi-weekly common assessments that are analyzed by the curriculum specialist. The specialist ensures that all levels of questions are being addressed and that the assessments are testing the stated standards and goals. Collaborative groups are then formed based on the results of the assessments, allowing for more flexible and grounded grouping. For teachers, though, the dichotomy between formal assessments and project-based learning focused on real world application proved frustrating; many felt a true disconnect between the daily routines of the classroom and forced assessments on Fridays. However, teachers also generally believed the accountability and ongoing assessment was a reality of education that they must be willing to embrace in order to be successful teachers.

The teachers are also changing their practice and assumptions about students based on assessments:

I mostly see [students] move down a group when the teachers do formal assessments because teachers think through their questioning and their informal assessment oh they got it, they're right on it, but then when we start looking at their higher order thinking question stems and students taking their bi-weekly common assessments dang, you know I thought they had it but maybe they didn't. Well this formal assessment says that they don't have it, and you kind of have to weigh what you know and what you see on a daily basis versus that one shot for a child to show what they know and can do.

Because teachers tend to scaffold questions and coach students towards success, informal classroom assessments are not always accurate. Formal assessments, combined with professional judgment, allow teachers to more accurately gauge student progress and match their teaching with mastery goals and the rigor of the written curriculum.

Unfortunately, the emphasis on accountability and data limits some of the freedom of teachers and students—all in the name of rigor. Grades 3 through 5 no longer participate in music or art at Hawk Elementary; electives have been replaced with a highly structured reading program to raise skill levels. Furthermore, the alignment of all instruction to the tests means that many of the "fun" things teachers used to do are no longer permitted:

We're asking that the data and assessment drive the planning and instruction. So, there's not a lot of just have fun with dinosaurs. If you're going to integrate them make sure you know you're covering stuff that's in the standard course of study and in the pacing guide.

Teachers and students are under enormous pressure, and rigor is being blamed for many of these consequences.

### *Collaborative Planning*

The accountability movement has lead to an increase in standardization of the curriculum; at Hawk Elementary the pacing guide is the embodiment of standardization. There is a pacing guide for each core subject, and each outlines the specific skills to be taught on each day for each grade level. The alignment of the curriculum allows teachers to concentrate on the "how" of teaching versus the "what." Many participants stated that the guide was a useful starting point for team planning, allowing each member of the team to take ownership for one subject since all teachers in a grade level would all be in the same place at the same time. They also believe that the focus on how to teach the skills allows them to increase the rigor in the classroom.

Planning takes the form of Professional Learning Communities (PLCs), which meet daily at Hawk Elementary. Each grade level meets during its 45 minute planning period at least three times, and usually five times, a week. Administrators usually join at least one meeting to provide coaching and information regarding District initiatives. During planning time, teachers are able to concentrate on discrete thinking skills and how they can be taught to students: "we talk about this is the skill we're going to work on this week—like generalization. So how can we also incorporate it into social studies?"

In spite of the emphasis on higher order thinking during planning time, tight collaboration also causes teachers to feel less able to meet the needs of their students: "It's hard for me to get on my kids when they can't, when they don't perform well when I'm not doing what I want to do with my students." Teachers frequently stated the lack of freedom to address the specific needs of the learners in their classrooms. They also expressed frustration about the constant press of time:

One thing I do notice is we're so pressed about the pacing guide. Okay we're here, but

we're supposed to be here. Okay, but they don't have it. We need another week. They

did not get whatever. We need another week or another two days, and sometimes I feel like we get pressed about we're supposed to be here on this week, on this day, and when they come in or when I come in this is what I better see. And that's not real realistic when you're talking about children.

With the focus on time, explicit teaching of higher order thinking skills becomes difficult; the content becomes the driving factor in the classroom. The lack of consistent emphasis on the skills needed for rigor—higher order thinking, application, and collaboration—may partially explain the difficulty teachers face in implementing rigor in the classroom.

### *Differentiation*

Despite the focus on the pacing guide, all participants were committed to differentiating instruction in order to give all students access to the rigor of the curriculum:

That means there's an equity piece to what we do. We don't just do the standard because that's the standard. We modify and differentiate our instruction so it meets our students, making sure that it's not too easy so they're just skating by and making sure that it's not too hard that they're having too much frustration.

Hawk Elementary is careful to provide the structures necessary for students to experience success; students are not left behind in the name of increasing rigor. Not only do teachers differentiate by ability level, as described above, but they also differentiate by interest and learning style. Even assessments are differentiated to give students the opportunity to demonstrate all that they have learned:

It gives them different ways to show they understand—they can draw, they can write, they can tell. They have some type of choice in the way that they're going to show you they understand the material because it makes no sense for you to modify the instruction if you're not going to also modify the assessment.

Differentiating in this way reflects the commitment to insisting students apply their learning rather than just restate knowledge-level facts. Allowing students to demonstrate their knowledge also allows teachers to inject some of the “fun” stripped from the curriculum in the name of accountability through project-based learning. Projects present students with the opportunities to embrace challenge, raising their self-confidence because teachers have confidence in their abilities to meet rigorous requirements and be successful (Pete & Fogarty, 2005).

Differentiation also bears a risk, however. Teachers expressed concerns that certain students were unable to meet certain standards, and so they were given a different caliber of work. Equal access to the most rigorous curriculum is not guaranteed, which becomes especially detrimental when the student who was given little access to higher order thinking encounters higher order questions on the high-stakes tests.

### Conclusions

Although rigor is a clear emphasis at Hawk Elementary School, a concrete definition remains elusive. All participants discussed an emphasis on higher order thinking and application to real world situations, which is well-documented in the literature as key aspects of a rigorous curriculum. However, the actual implementation of these strategies in the classroom remains difficult.

The high profile of the results from state tests elevates their status within the school. Although the tests rely on higher order thinking stems, the emphasis on content subsumes the thinking skills. Furthermore, the pacing guides designed to ensure that all of the content is “covered” results in a culture that focuses on the “what” over the “how,” and teachers and administrators struggle against this dichotomy. Finally, in the interest of differentiation some students do not gain access to the highest levels of inquiry, resulting in uneven access to the most rigorous curriculum in the school.

### *Implications for Administrators*

Although Hawk Elementary School possesses a unique culture, schools with similar demographics and resources may be able to learn from their journey regarding the implementation of a rigor in all classrooms. First and foremost, it is critical that administrators facilitate conversations about the definition of rigor within their buildings. A consensus regarding the definition must be created for the school in order to determine which strategies will be emphasized in classrooms. Furthermore, a common definition will allow the school to effectively communicate with parents regarding classroom expectations and strategies that can be used to support student learning at home.

Once the school has a common definition, it is critical that administrators empower teachers to choose strategies to be used in classrooms that support the definition and engage students in rigorous activities. Although some similarities should exist among classrooms to ensure a smooth matriculation for students, teachers must retain some autonomy to evaluate the needs of their students and implement strategies that they believe will be most effective.

Finally, administrators must routinely look for classroom activities that support the definition and expectations established by the faculty. If strategies are not consistently implemented in the classroom, students will not reap the benefits of a rigorous curriculum. Cognitive coaching should be used as a modeling tool to help teachers incorporate true higher order thinking for all students daily.

### *Implications for Teachers*

Once a common definition of rigor is established for the school, teachers must make the definition a reality in the classroom. Hawk Elementary provides valuable insights into making this complicated transition.

Simply having a set of question stems to encourage higher order inquiry is not enough. Although they may provide a valuable framework and tool for students, explicit

teaching of the thinking skills and gradual weaning away from the tool is necessary to ensure higher order thinking becomes a habit of the mind. Furthermore, students must be given ample opportunities to ask meaningful questions that do not rely on fill-in-the-blank stems to ensure that inquiry becomes a life skill and not a rote procedure.

As students begin to embrace inquiry strategies, teachers must provide ample opportunities for in-depth exploration of a topic. This type of study is very difficult with a regimented pacing guide that only allows two to three days per concept. Instead, concepts should be integrated into longer units that would allow students and teachers to engage more meaningfully with the content. Collaborative planning time would need to be reallocated to discussion of the “what” along with the “how” to make inquiry activities possible.

Finally, although differentiation is critical, teachers must ensure students ultimately reach the same destination. Expecting some students to only reach certain levels of inquiry excludes some students from the most rigorous curriculum available in the school. It may take some students longer to reach the application level, but it is critical that strategies are implemented to ensure they ultimately reach that goal.

#### Limitations

This study only examined classrooms in grades three through five, although all grades utilize the same stems and pacing guide formats. Since the same levels of questioning are used in all grades, it would be useful to see their implementation in the primary grades as well. Furthermore, the lower grades help form the larger school culture and could inform the definition of rigor even further.

Although students were questioned informally during observations, their voices are noticeably absent from the analysis. Their impressions of the use of the question stems and application activities could also provide a unique perspective on the definition of rigor for the school.

#### Suggestions for Future Research

The definitions of rigor presented in this paper are unique to Hawk Elementary. These themes could be used as a framework to study rigor in other elementary schools. Are these themes consistent? Is the spoken definition and actual implementation similarly dichotomous in other schools?

Furthermore, additional research regarding specific strategies to scaffold rigor for all students is critical. Although teachers discussed general differentiation strategies, specific practices seemed elusive. How could all students ultimately reach the same destination? Answers to these questions would not only assist Hawk Elementary School in its pursuit of rigor but also could assist many other elementary schools who are struggling with similar test scores and desires for teaching students how to think and become life-long learners.

Although rigor is a critical element of a positive school culture that encourages academic achievement, both its definition and implementation remains elusive. With the vast array of definitions and strategies outlined in the literature, teachers and administrators must collaborate to form succinct definitions for their own buildings and then select specific strategies to implement the definition for all students. Higher-ordering thinking, real world application, and collaboration should be at the heart of the definition and strategies—not only for students but also for teachers. Ultimately, the definition must also be communicated with students and parents so that rigor can truly become a cornerstone of school culture and student success.

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